

EP 0,856,277 A1

EP 856 277 A1

Translated from German by the Ralph McElroy Co., Custom Division
P.O. Box 4828, Austin, Texas 78765 USA

Code: 1505-65485

EUROPEAN PATENT OFFICE
PATENT NO. EP 0 856 277 A1

Int. Cl.⁶: A 47 L 13/17
A 47 L 1/08

Application No: 98101124.0

Application Date: January 23, 1998

Publication Date: August 5, 1998

Patent Bulletin: 1998/32

Priority
Date: January 31, 1997
Country: DE
Number: 19703500

Designated Contracting States: AT, BE, CH, DE, DK, ES,
FI, FR, GB, GR, IE, IT,
LI, LU, MC, NL, PT, SE,

Designated States
of Applicability: AL, LT, LV, MK, RO, SI

TABLETOP CLEANING DEVICE

Inventors: Georg Mühlhausen
40597 Düsseldorf (DE)

Jens Bode
40470 Düsseldorf (DE)

Applicant:

Henkel Kommanditgesellschaft
auf Aktien
40589 Düsseldorf-Holthausen
(DE)

Abstract

The invention concerns a cleaning device for preferably cleaning smooth surfaces [containing] an approximately disc-shaped sponge (1), which can be saturated with cleaning fluid. The device consists of a bowl-shaped upper holder (2) to which the sponge (1) can be attached in such a way that the top side and a portion of the side edges of the sponge (1) are covered, along with a bowl-shaped lower holder (4) shaped to fit and receive the portion of the sponge (1) left exposed by the upper holder (2). The sponge (1) is sealed off from the environment by the combination of the upper (2) and lower (4) holders.

A particular version of the invention also has, for storing cleaning fluid, a hollow receptacle (7) with a sealable refill opening (8), which can be attached to the top--the side opposite the sponge (1) of the upper holder (2). This attachment includes a connection between the storage space in the hollow receptacle (7) and the sponge (1) held by the upper holder (2).

Description

The invention concerns a cleaning device for preferably smooth surfaces, containing a sponge that can be saturated with a cleaning fluid.

The cleaning of work surfaces is an important problem for those who use them. Often, [the cleaning of] such surfaces is undertaken by cleaning personnel while the users of those surfaces are not present. In these cases it cannot be ruled out that these cleanings are undertaken with the same materials that are also used to clean sanitary facilities.

Independent of the question of whether the cleaning of work surfaces by cleaning personnel is done thoroughly and hygienically, there is also often the desire for the spontaneous removal of the soiling that accumulates during normal usage.

The technical problem that provides the basis of this invention consists of developing a cleaning device for preferably smooth surfaces and which can be kept, constantly ready for use, on or near the surface to be cleaned. This problem is solved according to the invention by the fact that a suitable type of cleaning device is formed in such a way that it includes an approximately disc-shaped sponge and consists of a bowl-shaped upper holder, to which the sponge can be attached in such a way that the top side and a portion of the side edges of the sponge are covered, along with a bowl-shaped lower holder shaped to fit and receive the portion of the sponge left exposed by the upper holder, so that the sponge is sealed off from the environment by the combination of the upper and lower holders.

Such a cleaning device is advantageous because it is suited for the quick and thorough cleaning of surfaces, particularly smooth surfaces, and because it is ready to use, that is, it can be kept, with its sponge saturated with a cleaning fluid, on or near the surface to be cleaned without the danger of the saturated sponge quickly drying out. This is particularly important when the cleaning fluid consists of an alcohol-based

cleanser or a disinfecting cleanser, which tend to evaporate. By means of the sealed barrier to the environment, the soiling of the sponge by the environment is also advantageously avoided.

A particular version of the invention, in which the cleaning device also has a hollow receptacle for storing cleaning fluid, advantageously makes the maintenance of a constant operational readiness easier. From the sealable refill opening, the cleaning fluid reaches the sponge, which is connected to the hollow receptacle only when the sponge is not saturated and thus exerts suction upon the liquid reserves. If there is a separating wall between the storage space and the opening at the bottom of the hollow receptacle having only connecting openings above the maximum fill line for the storage space, then the cleaning device must be intentionally tipped in order to allow liquid to reach the connection to the sponge. In this way, advantageously, the user can deliberately decide when he wants to saturate the sponge with the cleaning fluid. This is also made possible in the version of the invention in which there is a connecting pipe in the shape of an inverted U between the lowest area of the storage space and the opening in the floor of the hollow receptacle.

In this case it is particularly advantageous when there is a means for pumping available, with which the cleaning fluid can be propelled to the sponge. If the hollow receptacle is made of flexible material, it can be used as such to pump by compressing it. This is advantageously made easier if its surface is at least partially shaped in the form of a bellows.

A supporting element for the sponge in the bowl-shaped lower holder prevents the sponge from coming into contact with the bottom. This prevents contaminants on the bottom from being transferred to the sponge. These supporting elements can be

easily represented by corresponding segments of material that are located along at least partial sections of the inner rim of the bowl. These can consist, for example, of lip-like rims constituting narrowings of the cross section.

For the maintenance of a constant operational readiness, it is particularly useful to have replacement sponges available. If the sponge is made of a material that can be prepressed in dry form and which irreversibly expands upon moistening to about 15 times its thickness, a supply of prepressed replacement sponges can be advantageously stored in a relatively small storage space, which can be located in a closeable manner in the lower holder below the bottom of the bowl.

The above mentioned and other advantages of the suggested cleaning device are clarified by means of the explanation of a version of the invention and which is represented in the enclosed illustration. In the illustration one can see the sponge 1 in the shape of a circular-ring-shaped disc that can be attached to the upper holder 2. This is effected by the [inverted-] bowl-like and closed-to-the-top form of the upper holder 2 and the cylindrical, stump-shaped extension 3. When the sponge 1, saturated with cleaning fluid and having expanded in thickness from that of a prepressed dry sponge 1a by a factor of about 15 due to moistening, is attached in a removable way to the upper holder 2, its upper surface and parts of its side edges are covered by the upper holder 2. The parts of its side edges involved are the upper portion of the side edges of the inner cutout and also parts of its outer side edges. In every case the lower portion of the sponge must remain free of any part of the upper holder 2, so that when it is applied to the surface to be

cleaned the sponge can be effective, without being hindered in this by any part of the upper holder 2.

The part of the sponge 1 fastened to the upper holder 2 and not covered by it can be accommodated in the bowl-shaped lower holder 4. For this, the bowl-shaped depression in the lower holder is shaped in such a way that, in combination, the upper and lower holders 2, 4 completely envelop the sponge. The bowl of the lower holder 4 is deep enough so that supporting elements located above the bottom keep the sponge 1 from coming into contact with the bottom. This advantageously prevents contaminants on the bottom from being transferred to the sponge 1.

The lower portion of the lower holder 4 can be used as a storage container for dry prepressed spare sponges 1a. This storage space is expediently closed with a lid 6.

The hollow receptacle 7 is located on the upper portion of the upper holder 2. The hollow receptacle 7 has a refill opening that is tightly sealable by means of the lid 8. The hollow receptacle 7 is made of a flexible material. Parts of its surface are shaped in the form of a bellows 10. A tube in the shape of an inverted U is attached to an opening at the side of the lower portion of the hollow receptacle 7. The upper section of the inverted U-tube 9 lies above the maximum fill line for the cleaning fluid storage space. The leg of the U, which leads downward, is connected to the opening in the lid of the lower holder 2.

When the storage space in the hollow receptacle 7 is filled with cleaning fluid and the bellows 10 is compressed, cleaning fluid is pumped into the U-shaped tube 9 and propelled to saturate the sponge 1. The amount of the fluid volume that is

propelled can easily be controlled by appropriate pumping action. Cleaning fluid that remains in the tube 9 is sucked back into the storage space when the pressure on the hollow receptacle 7 is released.

Claims

1. A cleaning device for preferably smooth surfaces and consisting of:

- an approximately disc-shaped sponge (1), which can be saturated with cleaning fluid,
- a bowl-shaped upper holder (2) to which the sponge (1) can be attached in such a way that the top side and a portion of the side edges of the sponge (1) are covered, and
- a bowl-shaped lower holder (4) shaped to fit and receive the portion of the sponge (1) left exposed by the upper holder (2), such that

the sponge (1) is sealed off from the environment by the combination of the upper (2) and lower (4) holders.

2. A cleaning device according to Claim 1, which also has, for storing cleaning fluid, a hollow receptacle (7) with a sealable refill opening (8), which can be attached to the top--the side opposite the sponge--of the upper holder (2), such that a connection exists between the storage space in the hollow receptacle (7) and the sponge (1) held by the upper holder (2).

3. A cleaning device according to Claim 2, characterized by the fact that the connection between the hollow receptacle (7) and the sponge (1) in the upper holder (2) is formed by corresponding openings in those surfaces of the two containers (2, 7), which face each other.

4. A cleaning device according to Claim 3, characterized by the fact that there is, between the opening at the bottom of the hollow receptacle (7) and a storage space for the cleaning fluid, a separating wall that only has connecting openings above the maximum fill line for the storage space.

5. A cleaning device according to Claim 3, characterized by the fact that there is a connecting pipe in the shape of an inverted U (9) between the lowest area of the storage space and the opening in the floor of the hollow receptacle (7), where the upper section of the inverted U-tube lies above the maximum fill line for the cleaning fluid storage space.

6. A cleaning device according to Claim 5, characterized by the fact that there is, in the hollow receptacle (7), a means for pumping the cleaning fluid.

7. A cleaning device according to Claim 6, characterized by the fact that the hollow receptacle (7) is made of a flexible material.

8. A cleaning device according to Claim 7, characterized by the fact that the surface of the hollow receptacle is at least partially shaped in the form of a bellows (10).

9. A cleaning device according to any of Claims 1 to 8, characterized by the fact that, in the bowl of the lower holder (4), which can accommodate the sponge (1), a supporting element for the sponge (1) is located above the bottom.

10. A cleaning device according to Claim 9, characterized by the fact that the supporting element consists of segments of material that are located along at least partial sections of the inner rim of the bowl.

11. A cleaning device according to any of Claims 1 to 10, characterized by the fact that there is a closeable storage space

for dry sponges (1a) located in the lower holder (4) below the bottom of the bowl.

EUROPEAN SEARCH REPORT

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl ⁵)
Y	US 1 989 201 A (KURTZ EDWARD ET AL) * the whole document *	1-3	A47L13/17 A47L1/08
Y	FR 66 818 E (OREMANCEY MARCEL-EUGENE) * the whole document *	1-3	
A	FR 1 256 689 A (KEDI) * the whole document *	1	
A	US 4 752 147 A (PERSI JOHN) * the whole document *	1,9	
A	CH 340 974 A (NIGRIN-WERKE CARL GENTNER) * page 1, column 2, lines 41 to 65 *	1,11	
A	DE 25 49 038 A (HENKEL & CIE GMBH) * the whole document *	1	
A	PATENT ABSTRACTS OF JAPAN vol. 014, no. 208 (C-0714), 27 April 1990 & JP 02 045029 A (KOBAYASHI SEIYAKU KK), February 15, 1990 * summary *	1	
A	FR 1 077 379 A (OREMANCEY MARCEL-EUGENE)		
The present search report has been drawn up for all claims.			TECHNICAL FIELDS SEARCHED (Int Cl ⁵) A47L
Place of search The Hague		Date of completion of the search May 6, 1998	Examiner Cabral Matos, A
CATEGORY OF CITED DOCUMENTS X: Particularly relevant if taken alone. Y: Particularly relevant if combined with another document of the same category. A: Technological background. O: Non-written disclosure. P: Intermediate document T: Theory or principle underlying the invention. E: Earlier patent document, but published on, or after the filing date. D: Document cited in the application. L: Document cited for other reasons. &: Member of the same patent family, corresponding document			